

Work Order ID 144529

April 19, 2016 4:16:50 PM

144529

Page 1

Item ID: D3340-13 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Skidtube Protector
 Start Date: 4/20/2016 Start Qty: 3.00 *5* SH Cust Item ID:
 Required Date: 5/2/2016 Req'd Qty: 3.00 *8* Customer:
 Reference:

Approvals: Process Plan: SH Date: 20160419 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3340	Rev B								
100	FLOW WATER JET	0.00							
100									
Waterjet	Memo	0.87							
FLOW CNC Waterjet	1-Cut as per Dwg D3340 Dwg Rev: <u>B</u> Prog Rev: <u>B</u> 2- Deburr if necessary								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
110									
QC	Memo	0.03							
Quality Control									
120	QC8- Inspect parts - second check	0.00							
120									
QC	Memo	0.06							
Quality Control									

DAS
38
9-89
APR 27 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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Page 2

Item ID: D3340-13 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube Protector
 Start Date: 4/20/2016 Start Qty: 3.00 ***3*** Cust Item ID:
 Required Date: 5/2/2016 Req'd Qty: 3.00 ***3*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.06			DAS				
130	NC BRAKE				30	10			APR 26 2016
Brake NC	Memo	0.42			9-89				
Brake NC	Deburr if necessary Form on brake as per Dwg D3340 using Jigs DT 8326 and DT8261								
140		0.00							
140	QC5- Inspect part completeness to step on W/O								DAS
QC	Memo	0.06							38
Quality Control									9-89
									APR 28 2016
150		0.00							
150	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3								
Powdercoat	Memo	0.09							
Powder Coating	START TIME: 2:45. FINISH TIME: 3:10. OVEN TEMPERATURE:								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
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Misidentified ☐	Past Due ☐								

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Page 3

Item ID: D3340-13

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Protector

Start Date: 4/20/2016 Start Qty: 3.00

3

Cust Item ID:

Required Date: 5/2/2016 Req'd Qty: 3.00

3

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC3- Inspect Part Finish	0.00							
160									DAS
QC	Memo	0.03							38
Quality Control									APR 29 2016
170	Identify as per dwg & Stock Location: <u>5601</u>	0.00							
170									
Packaging	Memo	0.03							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.30							
Quality Control									

10 APR 29 2016

MCS

MAY 02 2016

mf
16-4-29

DQA: _____ Date: _____



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Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence																																																																										
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____																																																																													
Misidentified ☐	☐ Past Due																																																																														

Picklist Print

April 19, 2016 4:16:03 PM

Page 1

Work Order ID: 144529

144529

Parent Item: D3340-13

D3340-13

Parent Item Name: Skidtube Protector

Start Date: 4/20/2016

Required Date: 5/2/2016

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP: A 05.11.10 Preliminary issue AP/EC
IPP Rev:B Now on Waterjet 06-10-06 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M1010S20GA		Purchased		No		110	sf	115.8084	1.258	3.972632			

M1010S20GA

1010/1025 SHEET

ac 16 Jan 27

Location

MAT019

Loc Qty

115.8084

115.8084

Loc Code

m130805

2.1

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

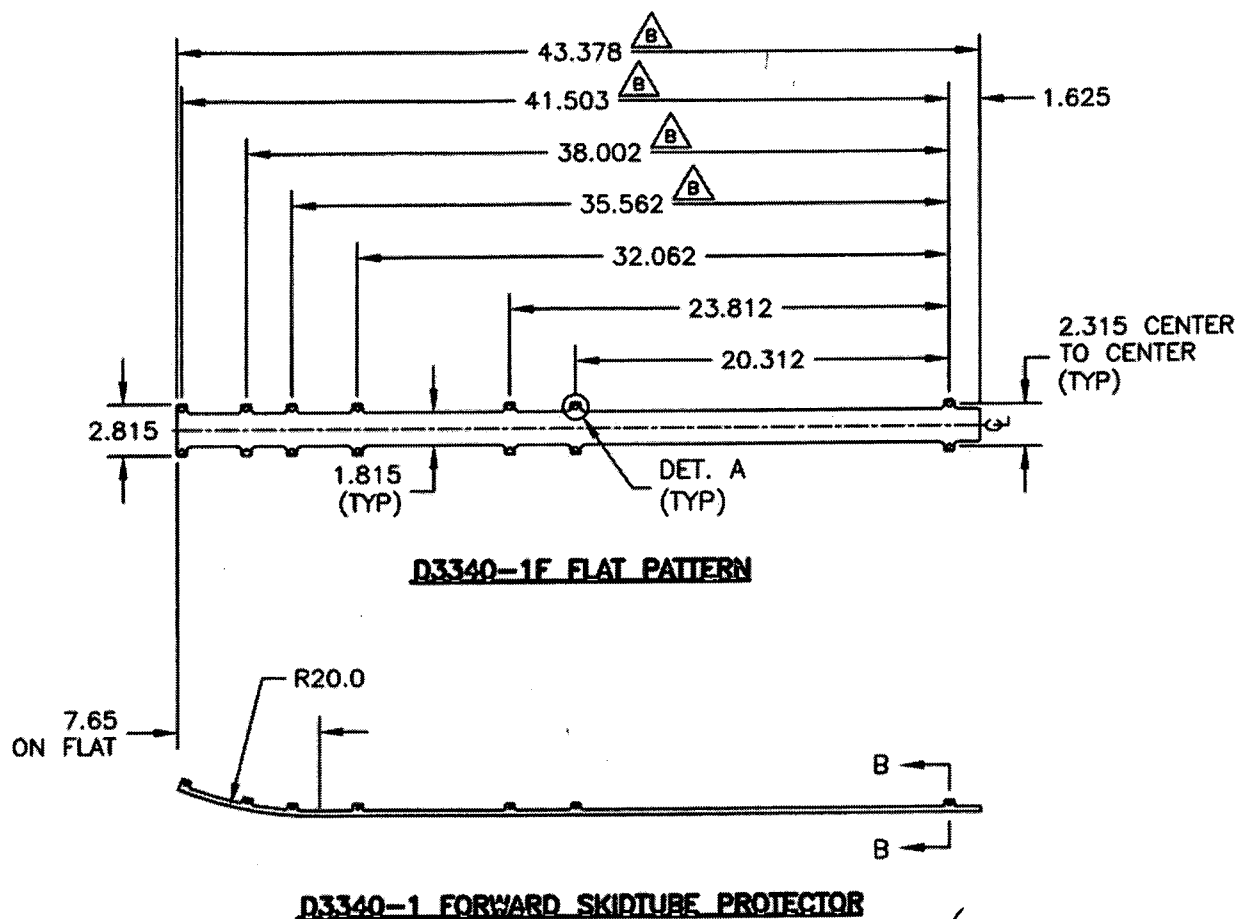
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					



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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3340	REV. B SHEET 1 OF 11
DATE 05.11.22		TITLE SKIDTUBE PROTECTOR	SCALE 1:10
A	05.06.09	NEW ISSUE	
B	05.11.22	ADD DETAIL D, CORRECT FLAT PATTERNS D3340-1/-3/-7/-9/-13/-19/-23	

RELEASED
05.11.28 *[Signature]*



NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

54
20160419
144529

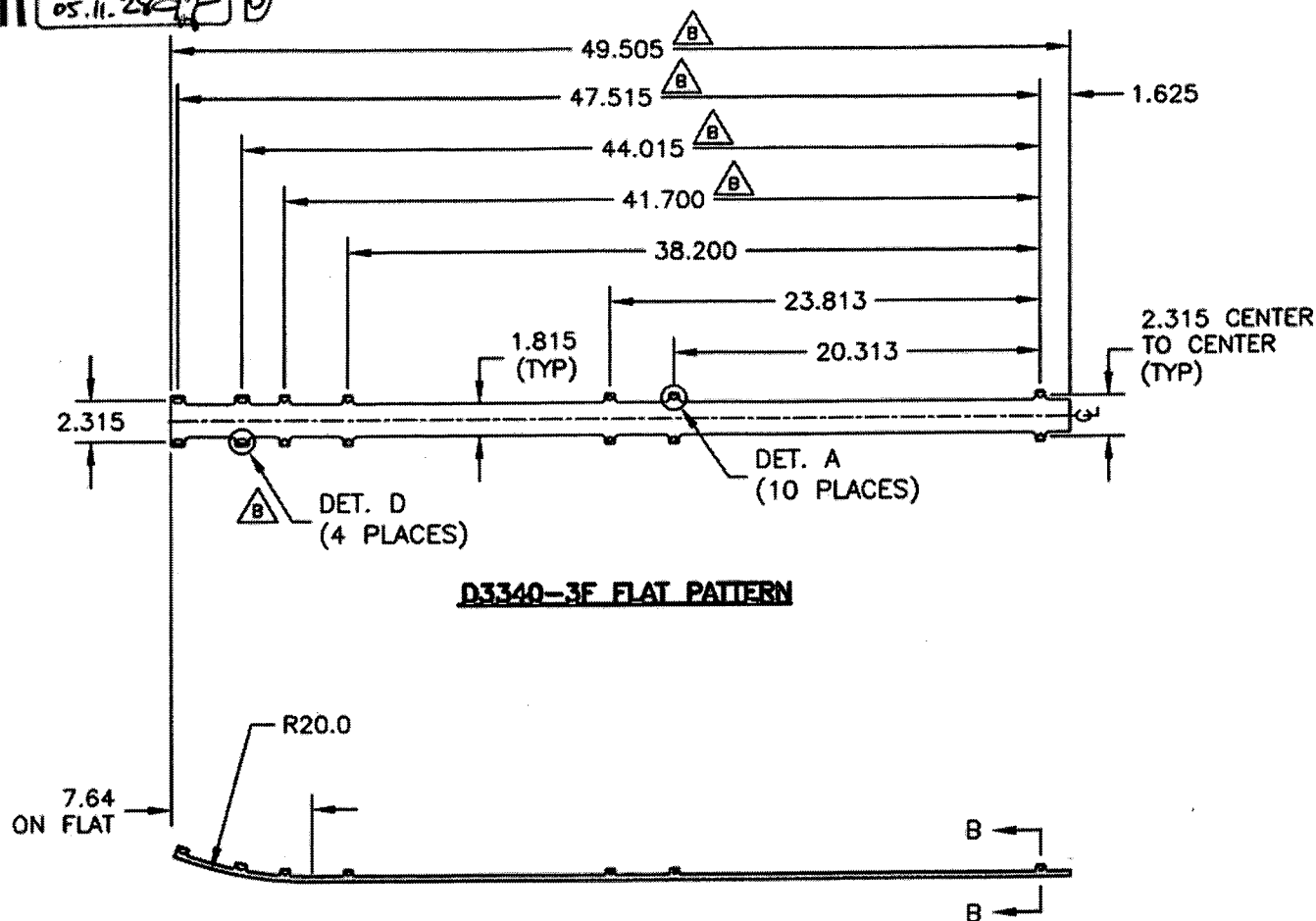
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DATE 05.11.22	TITLE SKIDTUBE PROTECTOR		SCALE 1:10

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05.11.22



D3340-3F FLAT PATTERN

D3340-3 FORWARD SKIDTUBE PROTECTOR

NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

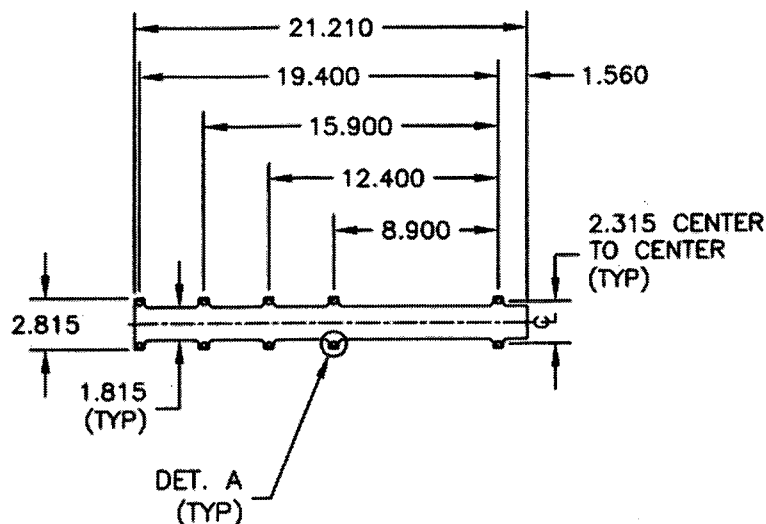
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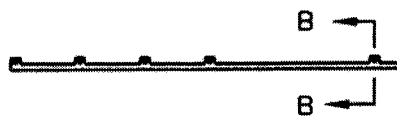


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DATE 05.11.22		TITLE SKIDTUBE PROTECTOR	SCALE 1:10

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D3340-5F FLAT PATTERN



D3340-5 FORWARD SKIDTUBE PROTECTOR

NOTES:

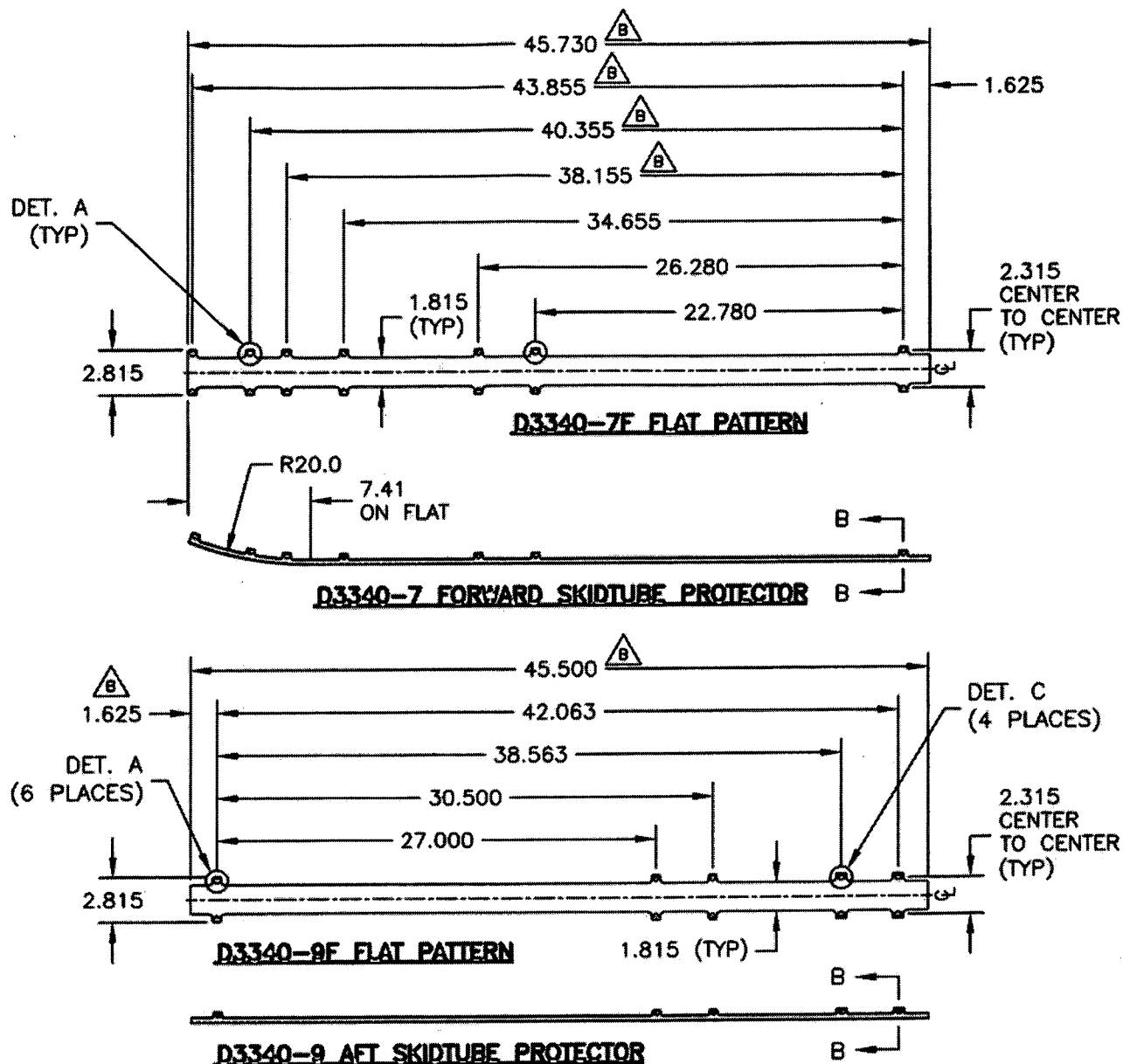
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CSA G40-21, 38W/44W/50W/60W/70W SERIES
COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

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DATE 05.11.22	TITLE SKIDTUBE PROTECTOR		SCALE 1:10



NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

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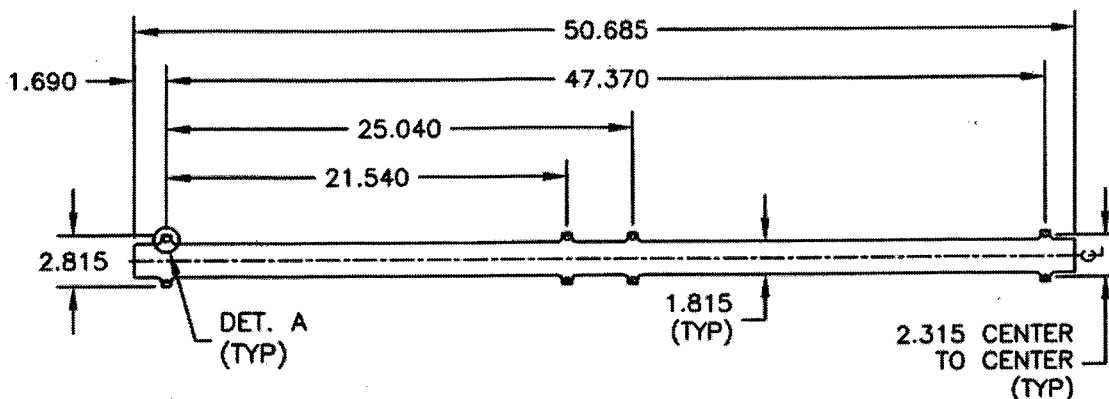
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DATE 05.11.22	TITLE SKIDTUBE PROTECTOR		SCALE 1:10

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D3340-11F FLAT PATTERN



D3340-11 CENTER SKIDTUBE PROTECTOR

NOTES:

- 1) MATERIAL: AISI 1010-1025 OR
ASTM A36/A366/A1008 OR
CSA G40-21, 38W/44W/50W/60W/70W SERIES
COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6)
PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS
OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

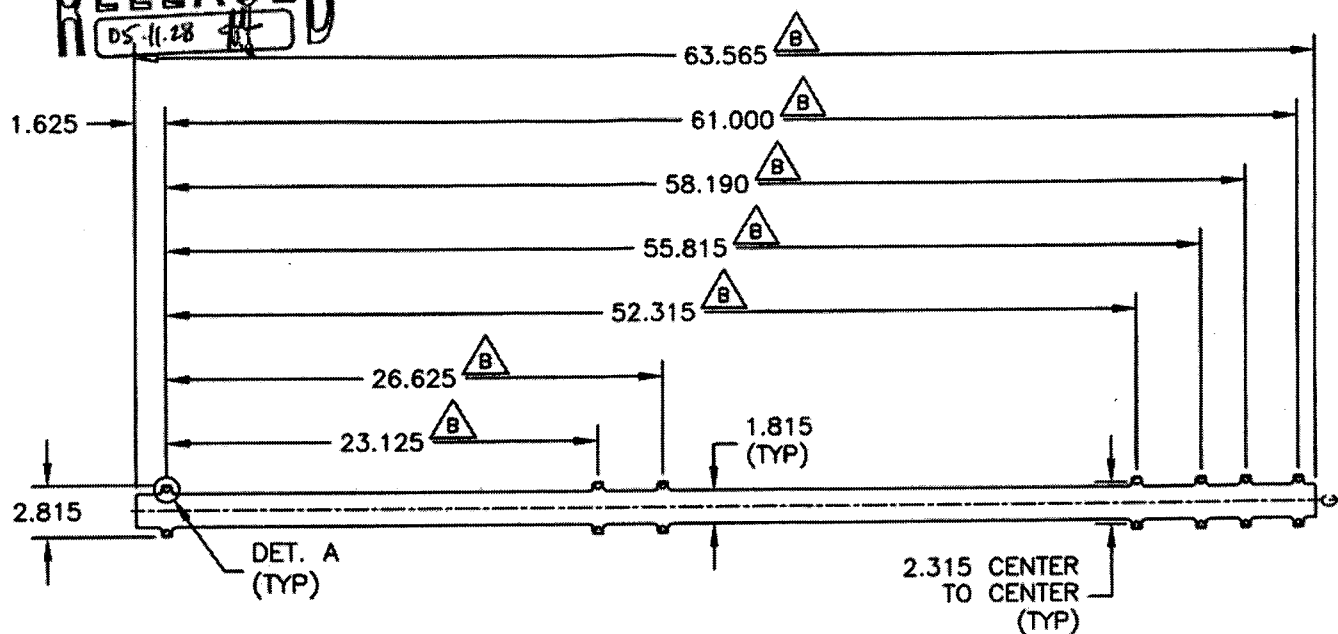
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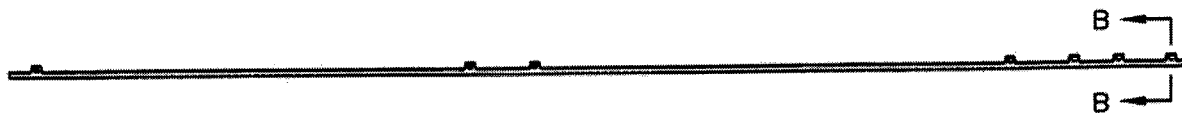


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D3340-13F FLAT PATTERN



D3340-13 AFT SKIDTUBE PROTECTOR

NOTES:

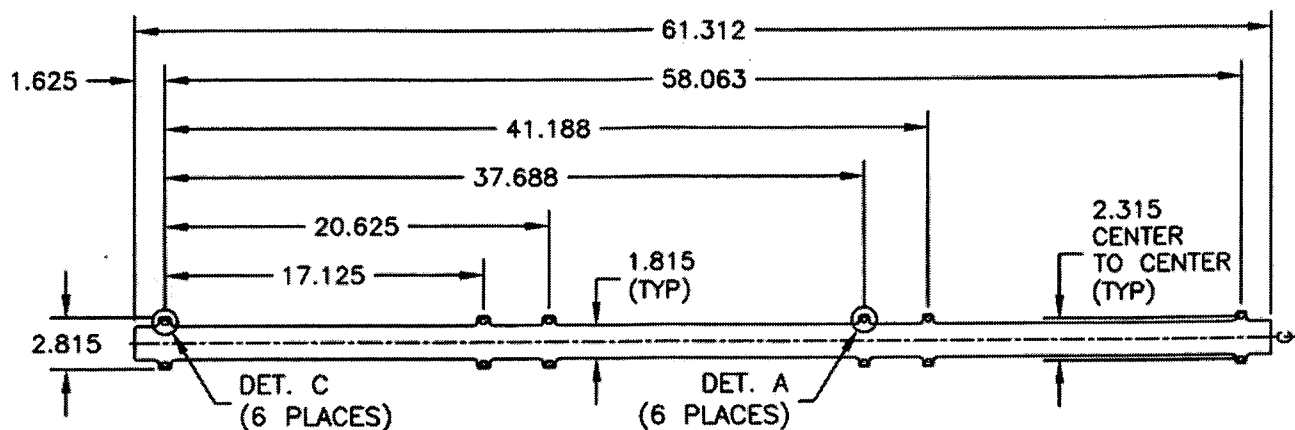
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- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

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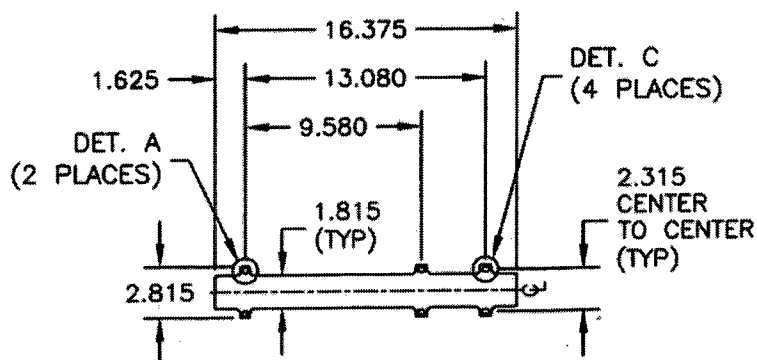
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DATE 05.11.22	TITLE SKIDTUBE PROTECTOR		SCALE 1:10



D3340-15F FLAT PATTERN

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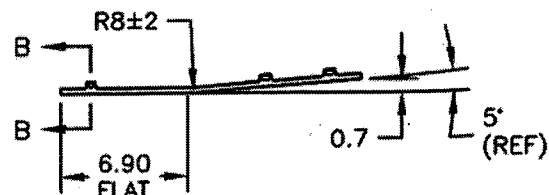
D3340-15 CENTER SKIDTUBE PROTECTOR



D3340-17F FLAT PATTERN

NOTES:

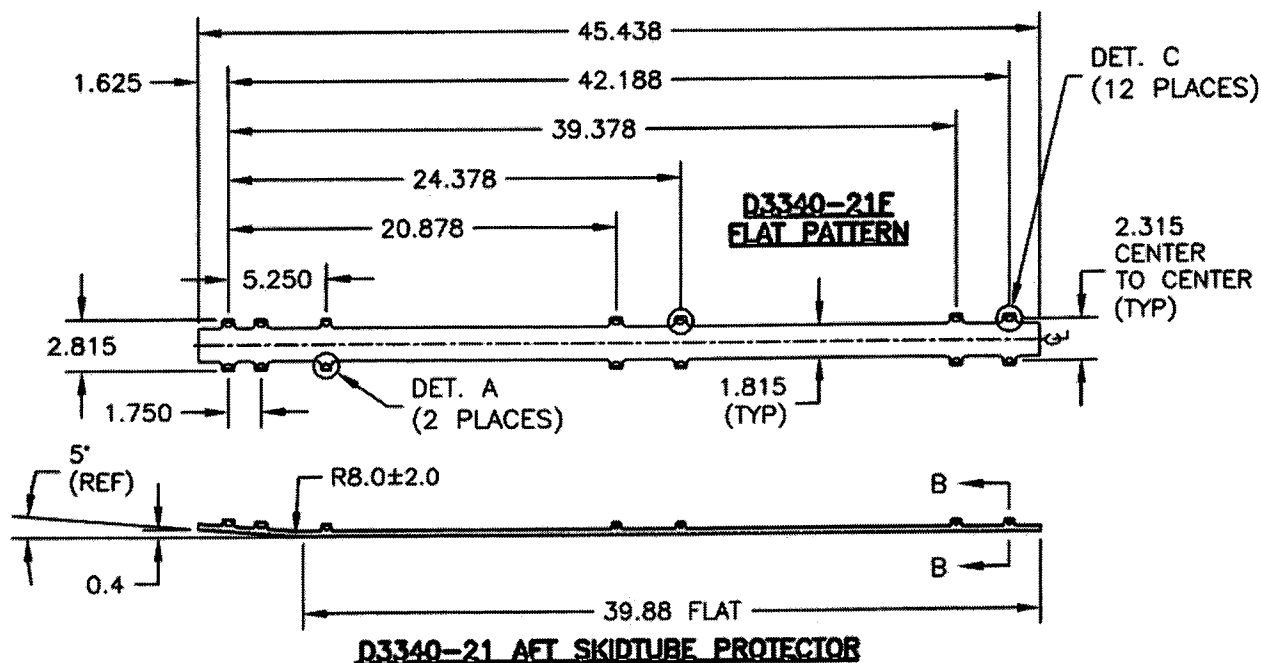
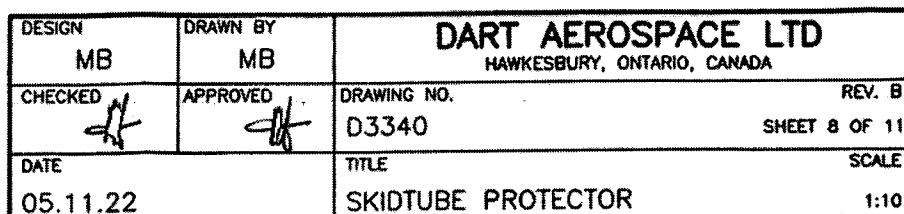
- 1) MATERIAL: AISI 1010-1025 OR
ASTM A36/A366/A1008 OR
CSA G40-21, 38W/44W/50W/60W/70W
SERIES COLD ROLLED STEEL 19 GAUGE
(0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX
(REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018
UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX



D3340-17 AFT SKIDTUBE PROTECTOR

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NOTES:

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W
SERIES COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

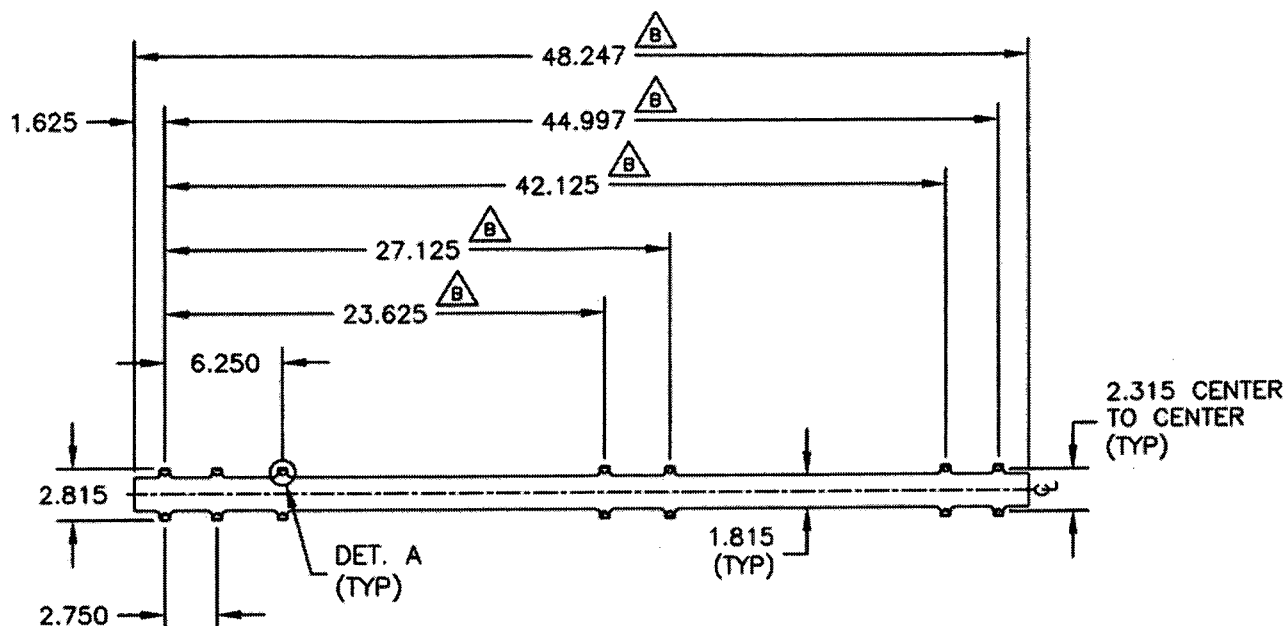
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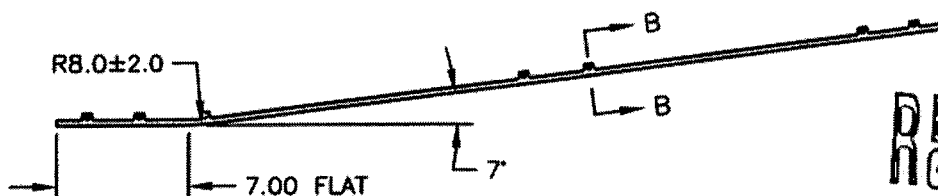
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DATE 05.11.22	TITLE SKIDTUBE PROTECTOR		SCALE 1:10



D3340-23F FLAT PATTERN



D3340-23 AFT FLOAT SKIDTUBE PROTECTOR

NOTES:

- 1) MATERIAL: AISI 1010-1025 OR
ASTM A36/A366/A1008 OR
CSA G40-21, 38W/44W/50W/60W/70W SERIES
COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6)
PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS
OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP CORNERS 0.063 MAX

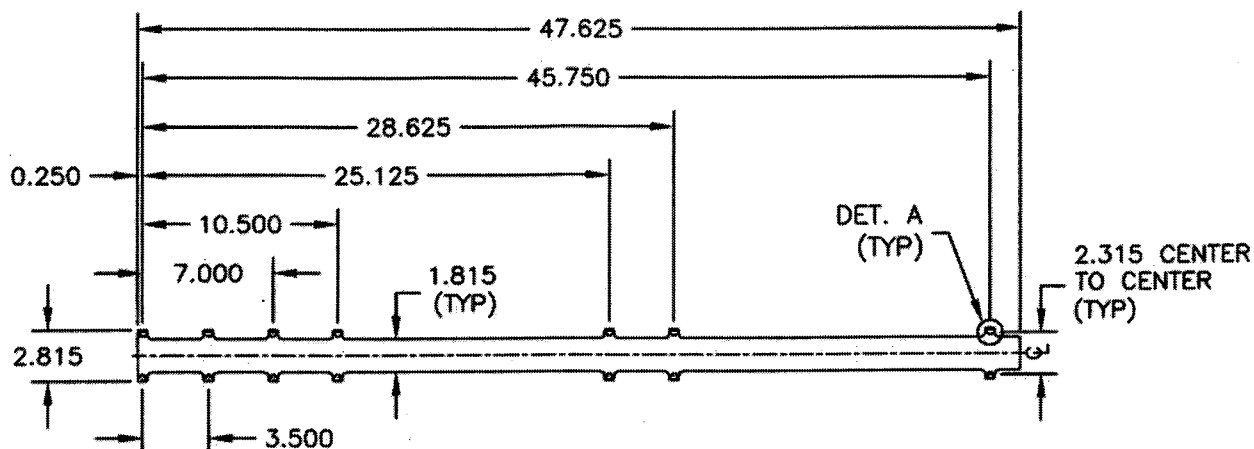
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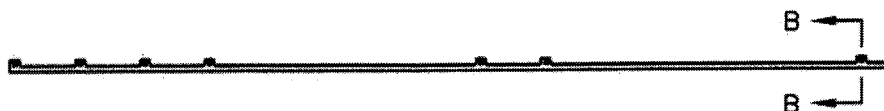


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D3340-25F FLAT PATTERN

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D3340-25 FORWARD SKIDTUBE PROTECTOR

NOTES:

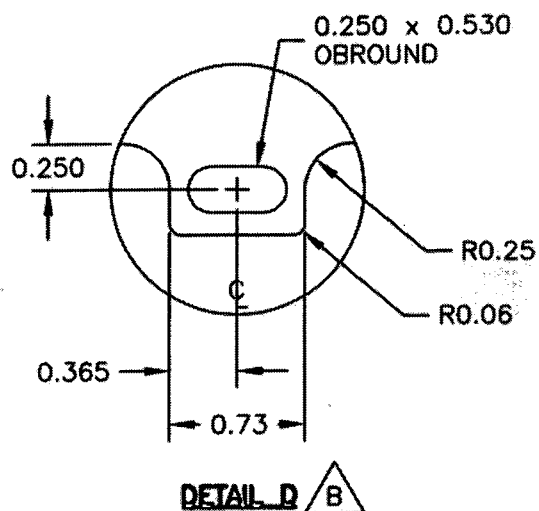
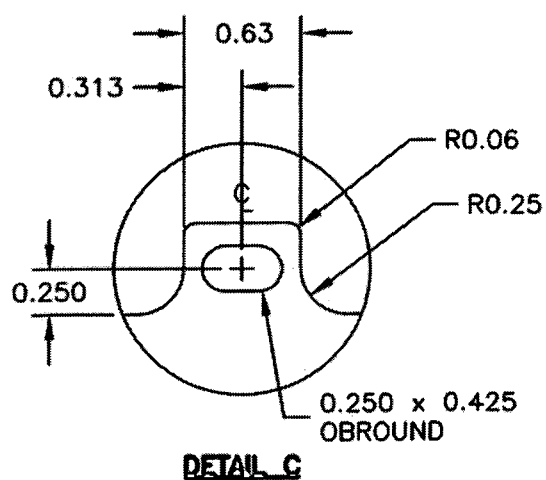
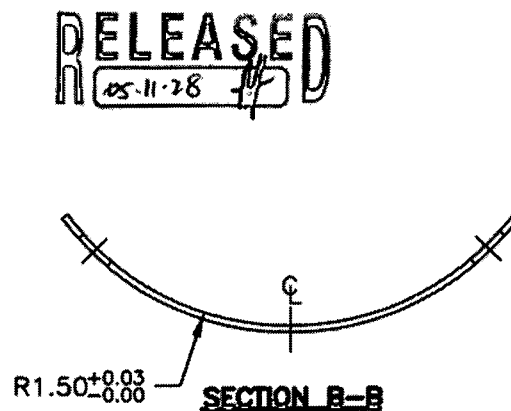
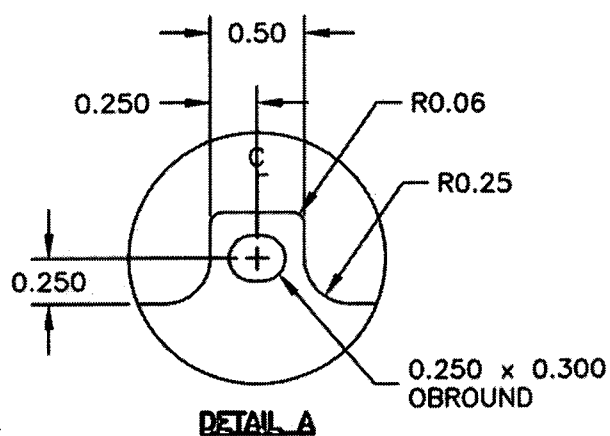
- 1) MATERIAL: AISI 1010-1025 OR
ASTM A36/A366/A1008 OR
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COLD ROLLED STEEL 19 GAUGE (0.040 THICK)
- 2) PART IS SYMETRICAL ABOUT CENTER LINE
- 3) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6)
PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS
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DATE 05.11.22		TITLE SKIDTUBE PROTECTOR	SCALE 1:1



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DART AEROSPACE LTD		Work Order:	144529
Description: Aft Skidtube Protector		Part Number:	D3340-13
Inspection Dwg: D3340 Rev: B		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.250	+/-0.010	.255	/		V-DL-02	
0.300	+/-0.010	.303	/		Tap	
0.50	+/-0.030	-	/			
0.250	+/-0.010	.247	/			
2.315	+/-0.010	2.313	/			
2.815	+/-0.010	2.816	/			
1.625	+/-0.010	1.627	/			
23.125	+/-0.010	23.125	/			
26.625	+/-0.010	26.625	/			
52.315	+/-0.010	52.315	/			
55.815	+/-0.010	55.815	/			
58.190	+/-0.010	58.190	/			
61.000	+/-0.010	61.000	/			
63.565	+/-0.010	63.565	/			
0.040	+/-0.010	.035	/			

Measured by:	DL	Audited by:	DAS 38	Preliminary Approval:	
Date:	16/04/26	Date:	APR 27 2016	Date:	
Rev	Date	Change	Revised by	Approved	
A	10.06.07	New Issue	KJ	 	